t $9 Billion Production Mark in 1976

production from prophyry ore, became important; there was expansion of lead mining; successful processing of zinc ores; expansion of iron ore output; expansion of coking coal production and pig iron, mining of building materials characterized this period.

The 1940-1963 period was one of general expansion of metal production and the birth of the steel industry. It also was the growing age of industrial minerals such as steel and steel related production. Copper production grew during this period, as did uranium, oil, phosphates and various new industrial minerals.

In the period from 1963 until today petroleum production grew and finally surpassed copper as king of Utah's minerals resources. Petroleum has led copper as the highest production valued resource for the last two years, Dr. Nelson reported.

Although it is possible that skilled Indian silversmiths may have used metals from Utah mines, the first known mining in Utah was done in the 1840s by Spanish-Americans. Silver and gold mines worked by Mexicans had been located near Cedar City and Kamas. Far more organized mine operations followed the settlement of the state by Mormon pioneers in 1847.

According to a mining history by Leonard J. Arrington, LDS Church historian, the intimate inspection of the mountains, the discovery of ores, and the organization of mining districts were primarily the result of stimulus by the federal government through the United States Army.

Need for Salt Noted

After Mormons arrived in the Salt Lake Valley, the need for Salt was immediately felt. This need was first met by boiling water from the Great Salt Lake in iron kettles.

PLACER MINING IN UTAH was uncommon. This photo, however, shows a rare placer operation that was believed to have been located in the Bingham Creek area. The photograph was taken by C.W. Carter, and early Utah Photographer.

Later more effecient solar evaporation methods were used and a commercial industry started. The first reported production was 12,000 tons in 1880, valued at $60,000.

At first the recovered salt was used mostly for table and culinary use, but in 1870 salt production went mostly to the newly developing mining industry. In 1885 Utah produced 15,000 tons of salt, and more than half of this went to mines in Utah and surrounding states for use in ore reduction through a chlorination process used to recover silver from ores.

The presence of copper in Utah was known for sometime but few early pioneers would have believed that this metal would become the state's most important metal.

Copper Find Announced

On May 9, 1860 a Salt Lake City newspaper announced the presence of copper in the Utah Territory. It said: "We have recently been presented with a specimen of virgin copper found in Cedar County (Valley), some 10 or 12 miles from Camp Floyd, which those well versed in mineralogy, to whom it has exhibited, pronounced equal to the best they have ever seen.

"If it exists in that vicinity, as alleged, in any considerable quantities, it would probably pay well for working, if any felt disposed to engage in such an enterprise, but in these days gold is the principal thing sought after, and a man who would engage in copper mining in an inland country like this, might, by some be considered in a state of insanity."

In 1862, John Lowded was reported to have found copper in Bingham Canyon while searching for some special logs to be used in the making of furniture for Governor Stephen S. Harding.

Unfortunately for him he never had the opportunity to capitalize on his discovery, for a short time later Brigham Young called him to be a Pony Express rider between Salt Lake and San Bernardino, Calif. By the time he returned his discovery already had been filed upon.

Until the turn of the century most copper mining was done underground and with hig-grade copper veins.

Low-Grade Discovery

What really gave the copper industry momentum was D. C. Jackling, who saw the possibilities of development of the low-grade prophyry copper ores. This opened another area in mining and, in effect, created new resources out of ores previously considered so low grade as to be worthless.

The trick to mining the low grade ores was mass production and retrieval of large amounts of the low-grade copper. With that eventful development, the underground copper mining operations of Bingham Canyon were turned into a huge open-pit, mass-production miracle.

During World War II copper from only the Bingham mine supplied one-third of all the copper used by the Allies.

From 1910 until 1975 copper was the king in valuation. From 1870 to 1910 silver was the leader in valuation.

The new king is petroleum, which took over from copper in 1975 when a record 40 million barrels were produced. Petroleum production dropped last year but still was higher in valuation than copper.

The variety of minerals mined in Utah are enormous. Included are gold, silver, coal, lead, zinc, copper, iron ore, oil and gas, gilsonite, uranium, nanadium, potash and phosphate, as well as salt, building materials and industrial minerals. Relative newcomers to the state's mining list are helium and beryllium.

Even this is not a complete list. With few exceptions all minerals, regardless of the date in which discovery was made or production started, are being produced today by Utah miners.

Tell Me Why

Where Do Gold Fish Come From

By A. LEOKUM

Win four "Tell Me Why" books, (1,500 questions answered. Illustrated). Send your questions, name, age, address to "TELL ME WHY!" care of this paper. Include Zip Code. In case of duplicate questions, the author will decide the winner. Today's winner is: KAREN LEONG, 8, Sunnyvale, Calif.

The ancestor of the modern goldfish is the dull - colored carp. The brilliant